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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,678	07/30/2003	Junji Kunisawa	2003_1074	6560

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EXAMINER

PERRIN, JOSEPH L

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/629,678

Applicant(s)

KUNISAWA ET AL.

Examiner

Joseph L. Perrin, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-12 and 14-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 and 10-12 is/are allowed.
- 6) ☒ Claim(s) 14-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments in view of the amendment of claim 1 with respect to claims 1-8 have been fully considered and are persuasive. The rejections of claims 1-8 have been withdrawn.
2. Applicant's arguments with respect to newly introduced independent claims 14 and 19 have been fully considered but they are not persuasive.
3. Specifically, regarding YAMAGATA applicant argues that the opening 103 of YAMAGATA passes through the holder 102 and does not correspond to the claimed hollow section. This is not persuasive because the portion of reference numeral 103 of YAMAGATA passing through holder 102 reads on applicant's hollow section, namely a void, and the portion of reference numeral 103 on the outer periphery of holder 102 reads on an aperture which is fully capable of allowing applicant's claimed intended use of purging a gas into the hollow section. It is noted that applicant's claimed "hollow section defined by said annular vacuum suction member" is significantly broad in scope and offers little structure with respect to the claimed holder other than virtually any void located in and defined by the holder.
4. Regarding KINOSHITA, applicant argues that neither of grooves 107 & 108 of KINOSHITA correspond to the claimed hollow section because the hollow section is defined by the annular vacuum suction member, the substrate and the disc-shaped holder plate. Moreover, applicant alleges that KINOSHITA does not disclose an annular

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vacuum suction member. This is not persuasive because the structural portions of KINOSHITA fully anticipate applicant's claimed apparatus. For instance, a careful review of the structure in Figure 20 (and others) shows the structure which reads on applicant's claimed apparatus. Grooves 107/108 clearly function as an "annular vacuum suction member" and the hollow sections between the annular suction members are connected to apertures on both ends of the "hollow sections". In addition, applicant relies on the intended use of whether the holes are for vacuum or gas. As clearly indicated throughout prosecution, in the absence of structural differences the intended use is afforded little weight and the apparatus of KINOSHITA is fully capable of performing said intended use.

5. Regarding WATANABE, applicant argues that WATANABE does not disclose the features of claims 14 & 19. However, since WATANABE is cited as a secondary reference (i.e. not solely relied upon for an anticipatory rejection) further discussion of WATANABE is not deemed necessary.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 15 & 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A material having a hardness that is lower than that of the substrate is indefinite since such material is wholly dependent on the unclaimed

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hardness and material of which the substrate is composed. Therefore, the metes and bounds of patent protection sought cannot be determined. Clarification and correction are required.

***Claim Rejections - 35 USC § 102***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 14-17, 19-20 & 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,951,833 to YAMAGATA. Re claim 14, YAMAGATA discloses a substrate holding unit with a holding plate (102) having an aperture (opening 103) and vacuum suction members (O-rings 104) contacting only the outer periphery of the substrate (101), thereby defining "a space" sealed from one side of the substrate (see, for instance, col. 10, line 54 - col. 11, line 30; Figure 1). Re claim 5, YAMAGATA further discloses the holding unit in combination with a surface processing unit (anodizing apparatus, see, col. 2, line 56 *et seq.*). Re claim 19, YAMAGATA further discloses using a dipping bath (see, col. 7, line 21, as well as Figure 1 and relative associated text). It is noted that applicant's recitation of purging gas is considered intended use and given little weight. That is, recitations that the purging aperture is "for purging a gas into a hollow space" and the gas being N<sub>2</sub> and the bath liquid being an etchant do not positively recite structure requiring N<sub>2</sub> or an etchant. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed

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invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

Recitation of YAMAGATA reads on applicant's claimed invention. Regarding the member being a resilient material having a hardness lower than the substrate, such as natural rubber, etc., YAMAGATA clearly discloses using rubber when contacting the substrate (for instance, col. 11, line 37). Furthermore, it is well within the knowledge of one having ordinary skill in the art that conventional o-rings are composed of rubber.

10. Claims 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,534,073 to KINOSHITA *et al.* (hereinafter "KINOSHITA"). Re claim 1, KINOSHITA discloses a wafer holding unit comprising an holder plate (101) and an outer peripheral vacuum suction member defined by two annular grooves (107) formed by at least two ring-shaped members, apertures (113/108) and the vacuum chuck device having a purging aperture ("holes of a vacuum chuck are provided corresponding to holes of a gas nozzle provided at a position making a pair with the vacuum chuck", see, for instance, col. 8, lines 47-51 of Kinoshita *et al.*) (see *also* Figures 11-18 and relative associated text). Re claim 5, KINOSHITA discloses a semiconductor processing (producing) device having the wafer chucking (holding) device and surface processing unit (CVD device), and cleaning (for instance, col. 1, lines 9-18). Re claims 15-17, KINOSHITA further discloses the well known practice of using rubber o-rings as vacuum seals (col 5, lines 40-44).

***Claim Rejections - 35 USC § 103***

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claims 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over KINOSHITA in view of U.S. Patent No. 5,025,280 to LAMB *et al.* (hereinafter "LAMB"). Recitation of KINOSHITA is repeated here from above. Although KINOSHITA discloses a vacuum chuck in a surface processing unit for CVD and cleaning, KINOSHITA does not expressly disclose a rotary vacuum chuck and a dipping bath for cleaning. LAMB teaches that it is known to utilize a rotary vacuum wafer holding unit as a part of a processing apparatus (30) with a dipping bath (24) to rotate and move a horizontal wafer via a cylinder portion of the vacuum chuck for cleaning wafers (see entire reference of LAMB, for instance, Figure 1 and col. 4, lines 8-17). The position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to substitute one known vacuum chuck for another in a wafer processing apparatus including a vacuum wafer holding unit in order to provide optimal processing and cleaning of a semiconductor. Moreover, there would be a reasonable expectation of success in substituting one known vacuum chuck for another known vacuum chuck in the semiconductor processing art, both references being analogous art in the semiconductor art.

***Allowable Subject Matter***

13. Claims 1-8 & 10-12 are allowed.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

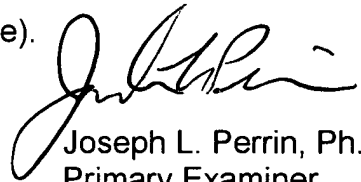
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 7:00-4:30, except alternate Fridays.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph L. Perrin, Ph.D.  
Primary Examiner  
Art Unit 1746

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